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REMARKS

At the outset, the Applicant wishes to thank Patent Examiner Catherine Simone for the many courtesies extended to the undersigned attorney during the Personal Interview on January 23, 2007, at the U.S.P.T.O. The substance of this Personal Interview is set forth in the Examiner Interview Summary, and in this Amendment.

The amendments to this patent application are as follows. New independent claim 32 has been added and is based upon, and is supported by, a combination of claims 1, 25, and 26. Hence, claims 1, 25, and 26 have been cancelled without prejudice.

The present invention is directed to a film-bitumen combination comprising at least three layers wherein said at least three layers comprise a bituminous layer and at least two film layers made from different materials, said bituminous layer being coated on said at least two film layers;

said at least two film layers comprising a first film layer and a second film layer produced from a polyolefin, polypropylene, polyamide, polyethylene terephthalate (PET), or polyacrylonitrile; said first film layer being located further away from said bituminous layer and having a larger coefficient of elongation than said second film layer;

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wherein at least a first edge of said at least two film layers projects beyond the bituminous layer and at least a second edge of said at least two film layers is shorter than the bituminous layer;

wherein a surface of a side of the combination facing away from the bituminous layer has been treated to have non-slip properties;

wherein each individual film layer is arranged in the combination in accordance with its thermal stability and its mechanical strength;

further comprising a barrier layer against mineral oils, oxygen or UV radiation disposed between two adjacent layers of said at least two film layers; and

wherein said barrier layer comprises a layer of lacquer.

In the prior art, many different backing films have been disclosed for bitumen membranes that are designed in particular to seal roof areas, but all of them have serious disadvantages. As a result of the migration of mineral oils into the plastic web as well as of thermal expansion of both the bitumen membrane and the plastic film, the plastic film detaches from the bitumen

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membrane in the course of time (curling). The material combinations often have very low thermo-mechanical strength properties, particularly when they are walked on. In addition, complicated processes are required to produce such material combinations.

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According to the present invention, these prior art problems are solved by the claimed combination of structural features.

It has proved to be very advantageous if a barrier layer particularly against mineral oils, oxygen and/or ultraviolet (UV) radiation is provided between two adjacent layers. Harmful effects are prevented as a result.

It is also very advantageous if a layer of lacquer is provided as a barrier particularly against oils, oxygen and/or UV radiation. Lacquer layers can be applied particularly simply.

In another very advantageous embodiment, a film layer located further away from the bituminous layer has a larger coefficient of elongation than a film layer that is located closer. This makes sure that the edges of the film layer do not detach from the bitumen layer. On the contrary, these edges are pressed onto the bitumen layer instead. Enclosed is a copy of Page 469 from the <u>Webster's New</u> <u>Collegiate Dictionary</u> (1957 Edition) defining "lacquer" as a "spirit varnish" such as "shellac."

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According to the present invention(as shown in FIGS. 1 and 2), swelling of the film web 5/6 facing the bitumen layer 2 due to the migration of mineral oils is avoided by the inclusion of a barrier layer 4. If swelling occurs, there is a danger that film 8 will detach from bitumen layer 2. If film layers 4 and 6 are chosen suitably, detachment of film 8 from bitumen layer 2 because of the effects of heat can be prevented. Film layers 4 and 6 should be selected so that the thermal expansion of film layer 6 is larger than that of film layer 4. This means that film 8 is actively pressed again bitumen layer 2 at higher temperatures at which the adhesive force of bitumen layer 2 is reduced. This is evident primarily at the edges, as the phenomenon known as curling which occurs with standard films for bitumen membranes, e.g. oriented and cross-laminated HDPE films with a symmetrical film structure, no longer occurs according to the invention.

All of the applied prior art references fail to recognize this problem solved by the claimed invention, and also fail to

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suggest the solution to this problem provided by the present invention.

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All of the claims were rejected under 35 U.S.C. 103(a) as being unpatentable over *Wiercinski et al (U.S. 5,687,517)* in view of various references such as *Hurst (U.S. 3,900,102)*, further in view of *Zickell et al (U.S. 4,992,315)* and further in view of *Kalkanoglu (U.S. 4,757,652)*.

The Wiercinski U.S. Patent No. 5,687,517 in column 1, in lines 5 to 12, discloses a flexible, sheetlike roofing underlayment, and more particularly a water-proofing membrane layer attached to a continuous carrier support sheet comprising at least two different plastic films bonded together and corrugated in the machine direction for skid resistance when the waterproofing membrane is adhered onto a sloped roof.

Wiercinski in column 6, in lines 58 to 64, discloses that further exemplary roofing underlayments 10 comprise a rubberized bitumen (asphalt) 14 comprising an oil plasticizer and an oil barrier material layer between the continuous carrier film 14 and rubberized bitumen layer 14. The oil barrier material can comprise polyvinylidene chloride, polyethylene terephthalate, polyamide, polyvinyl acetate, and polyacrylonitrile. Thus, Wiercinski fails to teach or to suggest a barrier layer comprising lacquer.

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The Zickell U.S. Patent No. 4,992,315 in column 1, in lines 5 to 15 discloses membranes adapted for the waterproofing and sealing of substrate structures, particularly in roofing applications, and the method of manufacturing such membranes. More particularly, this relates to waterproofing membrane laminates having a leading edge portion which constitutes a starter strip for receiving thereon the first row of roofing shingles, and a non-slip trailing edge portion which constitutes an underlayment for receiving thereon successive rows of roofing shingles.

Thus, *Zickell* fails to teach or to suggest a barrier layer comprising lacquer.

The Hurst U.S. Patent No. 3,900,102 discloses in column 2 in lines 11 to 20, structures which can be divided into two broad types. The structures of the first type are those designed to provide a continuous waterproof membrane adherent to a surface, the outer surface of the membrane having a non-adhesive surface. The structures of the second type are those designed to provide on a surface a layer of a pressure-sensitive contact adhesive, either over the whole of the surface, thus simultaneously providing a continuous waterproof membrane, or over selected parts of the surface only.

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Thus, Hurst fails to teach or to suggest the claimed barrier layer comprising lacquer.

The Kalkanoglu U.S. Patent No. 4,757,652 in column 1 in lines 5 to 10, discloses roofing products, and more particularly roofing products that have a release film on the back thereof and wherein the film is split to allow the material to be flopped back, so that one side can be struck, and then the other side can be flopped down and stuck.

Kalkanoglu in column 1, in lines 33 to 36, discloses that the composition of the product is made out of polymer-modified bitumen which makes the product self-adhering. A fiberglass reinforcement is arranged inside the product.

Thus, *Kalkanoglu* fails to teach or to suggest the claimed barrier layer comprising a lacquer.

The Jenkins U.S. Patent No. 5,824,401 in column 5, in lines 30 to 34, discloses where more than one oil-impermeable polymeric layer 20 is used, the support carrier assembly 14 should employ such layers in a symmetrical arrangement to minimize curling or other deformation due to the use of different materials in the first and second layers 16/18 and in the oil-impermeable polymeric layer 20.

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Jenkins in column 6, in lines 1 to 11, discloses a method for fabricating a waterproofing membrane laminate comprises the steps of: coextruding together a first polymer layer, preferably comprised of polyethylene, said first layer incorporating a light reflective additive such as titanium dioxide, with a second polymer layer operative as an oil-resistant and oil-impermeable barrier, said barrier layer comprising a polyethylene terephthalate, a polyamide, a polyvinyl acetate, a polyvinylidene chloride, or mixture thereof, and said oil-impermeable layer further comprising carbon black; and providing thereupon a continuous non-removably adhered waterproof and waterproofing bituminous adhesive layer.

Thus, *Jenkins* teaches away from the claimed use of various different material layers, and away from the claimed barrier layer comprising lacquer.

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For all these reasons, the present invention, and all the claims, are firmly believed to be patentable under 35 U.S.C. 103 over all the prior art applied by the Patent Examiner. Withdrawal of this ground of rejection is respectfully requested.

A prompt notification of allowability is respectfully requested.

Respectfully submitted,

Michael FÜRST

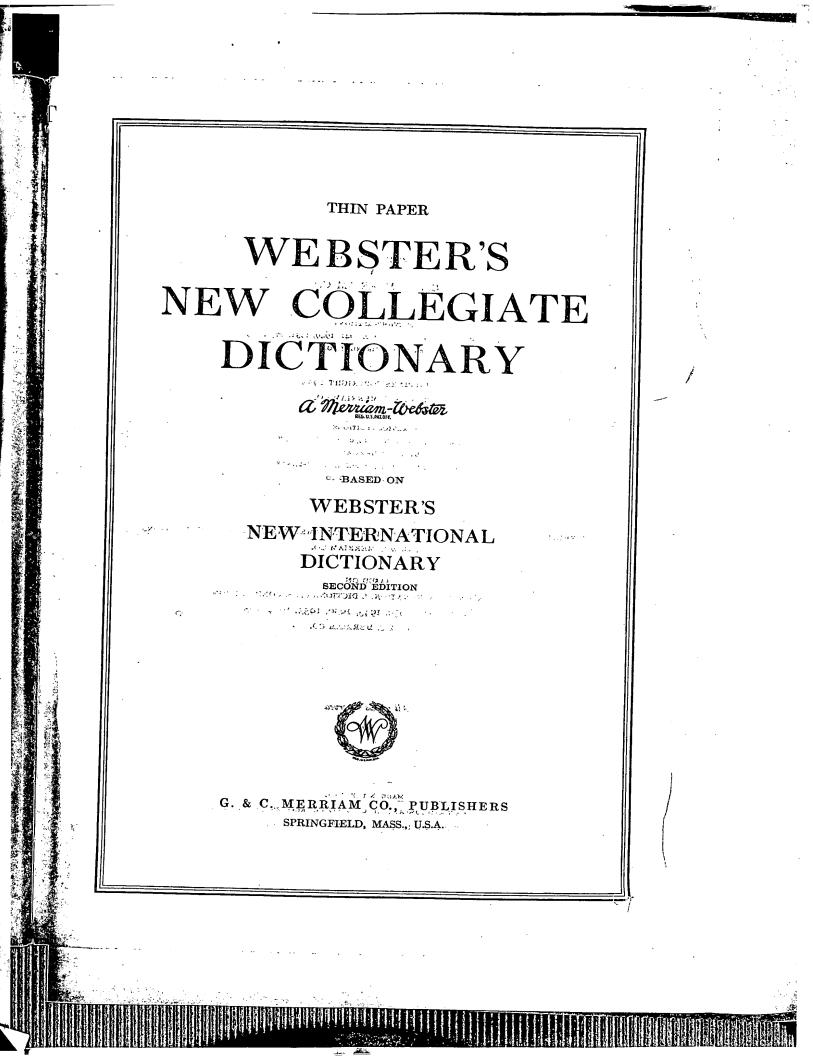
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ERF:lqh Copy of Petition for three-month extension Enclosure: 1. 2. Page 469 from Webster

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Iach'ry-ma'tor (läk'ri mā'tēr), n. A tear-producing substance:
 Iach'ry-ma to'ry (mà tō'ri or, esp. Brit., -tēr-i, mā'tēr-n, n.; pl. -alies (-riz). A vase for tears; esp., Archaeol., one of a class of narrow-necked vessels found in ancient tombs, and so called from a former inotion that the tears of the deceased person's friends were collected in them. - adj. Of or pert. to tears; teading to make tears flow.
 Iach'ry-mose (lāk'ri mōs), adj. - [L. lacrimosus.] Generating' or shedding tears; tearint. - Iach'ry-mose-ly, adv.
 Iach'rg. (lās'ng), n. 1. Action of one that laces. 2. Any of various things that lace; a lace.

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